

ROCKY FLATS PLANT
Jefferson County, Colorado

Technical Review of Draft Surface Water Interim Measures/
Interim Remedial Action Plan/Environmental Assessment
and Decision Document for Operable Unit No. 2

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Region 8 Federal Facility Remedial Branch
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TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1.0 INTRODUCTION	1
2.0 TECHNICAL COMMENTS	1

1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) requested that PRC Environmental Management, Inc. (PRC) review the "Draft Surface Water Interim Measures/Interim Remedial Action Plan/Environmental Assessment and Decision Document for operable unit No. 2 (surface water IM/IRAP)" prepared for the Rocky Flats plant site. The surface water IM/IRAP was submitted by the U.S. Department of Energy (DOE) to EPA on June 12, 1990. PRC reviewed this document under the Technical Enforcement Support (TES) XII Contract, Work Assignment No. C08006. The following technical review comments are keyed to applicable sections of the document. Typographical and editorial errors in the surface water IM/IRAP have not been addressed.

2.0 TECHNICAL COMMENTS

1. Section 1.1, Page 1-2, Paragraph 2: The text states that "...the phased approach is to investigate alluvial and bedrock migration pathways first, and then to subsequently investigate ground-water contaminant sources." This statement could be clarified by changing bedrock to hydraulically-connected bedrock.
2. Section 1.1, Page 1-2, Paragraph 3: This paragraph implies that the mobile field treatability test units will include an ion exchange test unit if bench scale tests indicate it is feasible. However, ion exchange has been eliminated as a treatment option in Section 6.0 of this document. This discrepancy should be resolved.
3. Section 1.1, Page 1-3, Paragraph 1: The text implies that the carbon adsorption units will be installed and operational prior to installation of the microfiltration units during the field treatability test. It should be noted that operating carbon adsorption units without pretreatment with the microfiltration unit to screen out radionuclides may result in a mixed waste.
4. Section 2.3.5.4., Page 2-40, Paragraph 1: The statement that "ground water does not appear to be contaminated with radionuclides" is contradicted by data presented in Appendix A-5 of this report. Appendix A-5 shows that dissolved plutonium concentrations of greater than 1.0 pCi/l were detected at surface water stations SW-53 (1.89 ± 0.85 pCi/l) and SW-58 (1.06 ± 0.36 pCi/l). Dissolved plutonium was also detected at stations SW-50 ($.575 \pm .374$ pCi/l) and SW-52 ($.369 \pm .195$ pCi/l).

5. Section 3.3.1.5, Page 3-22, Paragraph 3: Justification for removing high values from the data set before computing concentration averages must be provided. The deletion of high values from the data set appears to have skewed the average concentrations to the low side. This is not a conservative approach. It should be demonstrated that the use of Dixon's Test is appropriate for this data set, given the data objectives.
6. Table 3-3: Acetone has not been included in this table even though the value of 65 $\mu\text{g/l}$ that was detected at surface water station SW-101 is above the regulatory level of 50 $\mu\text{g/l}$ and is not reported in Table 3-4 as an outlier. The table should be revised to include acetone.
7. Section 4.3.1.1, Page 4-10, Paragraph 3: The design flow of 13 gpm measured at station SW-103 may be an inadequate basis for the design of collection system CS-103, which is located approximately 600 feet downgradient in an adjacent (and apparently larger) drainage. The flow rate for CS-103 should be revised upward to reflect the larger drainage area contributing to the flow at CS-103.
8. Section 4.3.1.1, Page 4-13, Paragraph 2: The basis for locating collection system CS-103 600 feet downgradient from the seep source is not explained in this section. The chosen surface water collection alternative has been justified in part because it prevents organic compounds from volatilizing as the surface water moves downgradient towards the retention ponds. The collection system for surface water station SW-103, as depicted in Figure 4-2, would allow contaminated surface water to travel approximately two-thirds of the distance to pond B-5 before collection. The location of collection system for SW-103 should be justified.
9. Section 4.3.1.1, Page 4-13, Paragraph 2: The text should explain why a 5,000 gallon sump is proposed for collection system CS-103, which has a design flow of 13 gpm, while a 1,000 gallon sump is proposed for CS-61, which has a design flow of 38 gpm (Figure 4-3).
10. Section 4.3.1.1, Page 4-13, Paragraph 3: Soil excavated during the construction of CS-55 should not be used to construct a runoff diversion berm. This soil is likely to be contaminated, particularly with plutonium and americium, and may contaminate diverted surface water.

11. Section 4.4.2, Pages 4-28 through 4-36: In order to be consistent with the effluent requirements presented in Table 4-1, the removal of gross alpha, gross beta, and americium contamination should be addressed in this section.
12. Section 4.4.3.1, Page 4-37, Paragraph 3: The assumption that methylene chloride and acetone will not be present at SW-61 may be incorrect based on data contained in Appendix A. This appendix shows that 20 $\mu\text{g/l}$ of methylene chloride was detected at SW-61 while none was present in the associated blank. Methylene chloride was also detected at a concentration of 44 $\mu\text{g/l}$ without associated blank contamination at station SW-60, immediately upgradient of SW-61. Acetone was detected at a concentration of 65 $\mu\text{g/l}$ at station SW-101, which is also upgradient of SW-61. Acetone was detected in the seeps southeast of 903 Pad (SW-53 and SW-77) as well.
13. Section 6.1.1, Pages 6-1 through 6-3: This section should include a schedule for the collection of surface water from sumps at collection systems CS-53, CS-55, CS-63, and CS-64.